



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/721,664

11/25/2003

Tetsuya Fukuda

9281-4714

5952

7590

11/15/2005

Brinks Hofer Gilson & Lione
P.O. Box 10395
Chicago, IL 60610

EXAMINER

PETKOVSEK, DANIEL J

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/721,664

Applicant(s)

FUKUDA ET AL.

Examiner

Daniel J. Petkovsek

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on election filed October 11, 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on November 25, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/25/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This office action is in response to the election filed October 11, 2005.

Election/Restrictions

1. Applicant's election without traverse of group II, namely claims 11 and 12, in the reply filed on October 11, 2005 is acknowledged.

2. Claims 11 and 12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 11, 2005.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The prior art document submitted by Applicant in the Information Disclosure Statements filed on November 25, 2003, has been considered and made of record (note attached copy of forms PTO-1449).

Claim Objections

5. Claims 11 and 12 are objected to because of the following informalities: the claims must be formally canceled (within the claims). Claims cannot be canceled without an amendment on the record. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2874

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Gotoh et al. U.S.P. No. 6,847,424 B2.

Gotoh et al. U.S.P. No. 6,847,424 B2 teaches (ABS, Figs. 18-21, 24; column 19, line 19 through column 20, line 18; column 26, line 29 through column 27, line 10) an anti-reflective structure comprising many micro-holes 308c in material 308, each micro-hole having an opening at first surface and a bottom facing a second surface opposite to the first surface, each hole extending from the opening to the bottom (of the hole), which clearly, fully meets Applicant's *claimed* limitations. Regarding claim 8, the reflective structure with micro-grooves can be placed opposite the first surface (also see Figs. 10, 11, and 14).

Regarding claims 9 and 10, the device of Gotoh et al. '424 can be used in LCD units and comprises elements for guiding light.

8. Claims 1 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Umemoto et al. US 2003/0043315 A1.

Umemoto et al. US 2003/0043315 A1 teaches (Figs. 3-5; [0073]-[0082]) an anti-reflective (the holes themselves will not reflect) structure comprising many micro-holes A in material 4, each micro-hole having an opening at first surface and a bottom facing a second surface opposite to the first surface, each hole extending from the opening to the bottom (of the hole), which clearly, fully meets Applicant's *claimed* limitations.

Art Unit: 2874

Regarding claim 8, the reflective structure with micro-grooves B1/B2 can be placed opposite the first surface.

Regarding claims 9 and 10, the device of Umemoto et al. '315 can be used in LCD units and comprises elements for guiding light.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh et al. U.S.P. No. 6,847,424 B2.

Gotoh et al. U.S.P. No. 6,847,424 B2 teaches (ABS, Figs. 18-21, 24; column 19, line 19 through column 20, line 18; column 26, line 29 through column 27, line 10) an anti-reflective structure comprising many micro-holes 308c in material 308, each micro-hole having an opening at first surface and a bottom facing a second surface opposite to the first surface, each hole extending from the opening to the bottom (of the hole). Gotoh et al. '424 does not *explicitly* teach the claimed properties of the micro-holed structure of claims 2-6.

Regarding claims 2-6, a person having ordinary skill in the art at the time the invention was made would have found obvious (in view of the art to Gotoh et al. '424) the claimed limitations for the following reasons:

For claim 2, although not explicitly disclosed (reference is silent), a person having ordinary skill would have recognized having the holes 308c take up 70-85% of the area

Art Unit: 2874

of the opening to straight-line distance for the purpose of improving/modifying the amount of light that passes through the anti-reflective structure. The number of holes in the reference is not explicit, and the criticality of such has not been disclosed in the device limitations.

For claim 3, although not explicitly disclosed (reference is silent), a person having ordinary skill would have recognized having as low reflectance as possible in the gap (possibly air), being less than 1% reflectance for the purpose of decreasing the amount of reflection. A person having ordinary skill would have recognized that reflection was not desired, and the smaller reflectance, the more improved the light guiding device would function. Applicant has not stated any criticality of having less than 1% reflectance, other than that is known in the art (to inhibit unwanted reflection).

For claims 4-6, although not explicitly disclosed (reference is silent), a person having ordinary skill would have recognized any shaped arrangement of the holes and staggering of the holes to create different light patterns in the LCD system for the purpose of creating improved workability of the light manipulations. Applicant has not stated any criticality of having the shapes or staggering the holes over the prior art of Gotoh et al. '424.

Regarding claim 7, anti-reflective films are well known in the art to protect components and also to allow to little-to-no reflection in the optical system. A person having ordinary skill in the art at the time the invention was made would have recognized the use of anti-reflective films for the purpose of decreasing optical error (by protecting

Art Unit: 2874

the functional components). This limitation is viewed as non-critical to the functioning of the anti-reflective structure.

Inventorship

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, with respect to the state of the art of optical anti-reflective structures with holes/recesses: PTO-892 form references C and D.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Petkovsek whose telephone number is (571) 272-2355. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Petkovsek
November 13, 2005



Sunny Park
Primary Examiner
AU 2874